Enterprise resource planning (ERP) systems are enterprise-wide information systems that automate business processes and provide global data visibility (Shen, Wall, Zaremba, Chen, & Browne, 2004; Umble, Haft, & Umble, 2003). Among its many applications, it is particularly useful in integrating the supply chain into business processes. It is important to note that the techniques and tools involved in designing and developing ERP systems play a crucial role in the success of implementation. In fact, most failures in the implementation of ERP arise from poor design (Yusuf, Gunasekaran, & Abthorpe, 2004). Therefore, given the importance of ERP in the global business environment for competitiveness and viability, a focus on improving the techniques and tools of ERP development is needed.

As a potential way of improving ERP system usability, the collaboration theory is proposed in Chapter 1. The collaboration theory involves improving the collaboration between the user and the system by conceptualizing a partnership between them. The user provides the development framework for the system, thereby making it better able to support the user’s needs. As a result, the user interface is optimized to maximize the benefits of the user-system relationship and the user is better able to meet his individual objectives.

In designing an ERP system, modeling and simulation (M&S) are important to optimize performance. However, most of the M&S tools available today are not sufficient for model optimization. To overcome the weaknesses in the existing monolithic software design, a hybrid approach is recommended in Chapter 2. This would involve integrating legacy M&S tools into a component architecture that uses an XML-based model interchange format, which allows a homogeneous and standardized exchange between tool components. Building upon this hybrid approach, a universally applicable optimization component can be established.
ERP development and implementation is a complex undertaking that involves vast resources. To maximize the probability of success, Chapter 3 identified critical success factors (CSFs) of ERP implementation. Although the CSFs of ERP implementation has been widely studied, they have had a limited focus on western, or more specifically American and European, companies. Furthermore, changing technologies present new issues that need to be addressed in existing ERP implementations. Therefore, continual research and studies on CSFs of ERP implementation is needed.

Chapter 4 introduces integrated design system (IDS), an information processing approach for knowledge-based product development. IDS is a part of the overall ERP framework, with the purpose of converting descriptive information, such as that of human expertise, into information that can be utilized by decision-making algorithms. For product development-oriented companies, IDS can help leverage computing technology to facilitate engineering design and manufacturing. Ultimately, IDS helps companies deliver high quality, low per unit costs, and shorter lead times.

Chapter 5 reveals behavioral aspects in strategic transformation of organizations. Behavioral issues can transform organizations as they seek to implement large IT systems such as ERP. As the current competitive environment is requiring a greater concerted effort from companies via team activities, human partnerships and collective thinking power is becoming increasingly important. Therefore, when implementing an ERP system, it is necessary to have an understanding of effective management, as well as how ERP can change the organization.

In a highly competitive global marketplace, knowledge is now considered one of the last remaining possible sources of competitive advantage. In line with Chapter 6, the smart knowledge management system (SKMS) is a solution for converting information or tacit knowledge into explicit knowledge. SKMS sends information through a four step process of diagnosis, prognosis, solution, and knowledge, respectively. The end-result of SKMS is that decision-making is improved, decision times are reduced, and duplication of efforts is avoided.

ERP traditionally had been used only by large enterprises with significant resources. However, small and medium-sized enterprises (SMEs) are now emerging as its latest adopters, despite evidence to suggest that ERP’s complexities and risks are too great for smaller companies. To determine a manufacturing SME’s readiness to implement such a system, a framework based on the following four determinent dimensions exists in Chapter 7: 1) organizational context, 2) external forces, 3) perception of ERP, and 4) business process.

Chapter 8 discovered that in order to more successfully compete with global competitors, quality management is becoming a greater focus of businesses. The ISO 9001:2000 standard helps to attain higher quality levels via the use of quality management information systems (QMIS). Unlike MIS, QMIS was designed to incorporate information elements that could leverage the organization’s core competencies while being compatible to ISO 9001:2000.

Chapter 9 demonstrates motivational aspects of legitimate internet file sharing and piracy. Although file-sharing is typically viewed in a negative light, it has many positive CRM implications for organizations that embrace the new mode of communication. Ultimately, whether file-sharing thrives will depend on copyright protection, communications infrastructure, and innovative pricing and payment strategies.

Chapter 10 explores the next generation of customer relationship management (CRM) metrics. Although CRM has become a widely accepted practice, the implementation and usage of many systems have failed without an easily identifiable cause. The reason for the uncertainty lies in the fact that most CRM metrics are marketing- and efficiency-based, leading to skewed perceptions of the failure and reasons for failure. In reality, many failures result from the underestimation of CRM complexities, lack of clear objectives, and underinvestment in
the system. Therefore, a new system of CRM metrics is proposed, one that can be integrated with ERP reporting systems and data mining capabilities.

Overall, I found this book to be very instructive. Gunasekaran and associates provide a solid framework for the many considerations involved in implementing a successful ERP system. Key considerations in the development process include the readiness of the manufacturing MSE, the usability of the system-user interface of an ERP system, ERP component design, the application of critical success factors, and knowledge-based computing within the ERP. Proposals and theories are supported with empirical evidence, research, and real-life studies, helping to validate the importance of these considerations. Though ERP systems require immense capital and labor expenditures, they can have positively transforming effects on the organization. Therefore, sufficient investment and planning is required to reap its full benefits and achieve maximum efficiencies throughout the enterprise.

REFERENCES


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